



2024 Buyer's Guide

Empowering Your Microbiome Research

Meet the 2023 winners of Cerillo's Co-Culture Champion Contest (More Inside)



01 About Cerillo

Cerillo's smart and accessible research platform offers a comprehensive suite of tools to tackle variability in microbiome research at the bench.

02 Microplate Readers

Our go-anywhere microplate readers have kinetic and endpoint reading capabilities and are rugged to withstand harsh conditions of anaerobic chambers.

03 Co-Culture Duet System

Cerillo's Co-Culture Duet System® is the first off-the-shelf platform for conducting microbial interaction studies.

04 Wireless Accessory Package

Study the growth curve of microorganisms like bacteria, yeast, and fungi with real-time monitoring and remote controls.

05 Meet Our Champions

Find out how researchers from around the world are using Cerillo's research tools and platforms to go from proof of concept to publication.

About Cerillo

Navigating variability challenges with Cerillo's revolutionary research platform

The microbiome undeniably holds unlimited keys to advancing global health (human, environmental, ecological). However, microbiome research faces heightened susceptibility to problems from variability due to the intricate and dynamic nature of microbial communities. Factors like genetics, diet, and lifestyle contribute to substantial individual, temporal, and spatial variations in the human microbiome. Methodological and technical differences in sample processing and analysis add complexity. And limited sample sizes and population heterogeneity exacerbate these challenges. Now more than ever, standardizing methodologies and improved statistical approaches are crucial for minimizing variability.

Cerillo's innovative approach leads the way toward a steadfast future in microbiome research through accessible, standardized research solutions

Recognizing the pivotal need to overcome these challenges in microbiome research, Cerillo has developed a platform, cherished by its users, to address global-scale variability. Through affordable, accessible, and user-friendly research tools, Cerillo aims to eliminate variability, ensuring consistency in microbiome studies. This effort is crucial for the successful development of microbiome-based products, offering a pathway to advancements with enhanced precision and reliability at the research level.

Our executive team is dedicated to advancing microbiome research by providing groundbreaking solutions precisely where they are most essential.



Jason Papin, Ph.D.
Chief Product Officer



Kevin Seitter
Chief Technology Officer

Eric Mayton Chief Executive Officer



Cerillo's Connected Research Platform



Cerillo's approach to the microbiome research community focuses on directly addressing customers' programmatic challenges such as affordability, accessibility, and training. Their attention to detail enables us to accelerate our research with confidence, knowing that precision and experimental accuracy are foundational to their products.

Andrew Bartko

Executive Director, Center for Microbiome Innovation
UC San Diego, CA



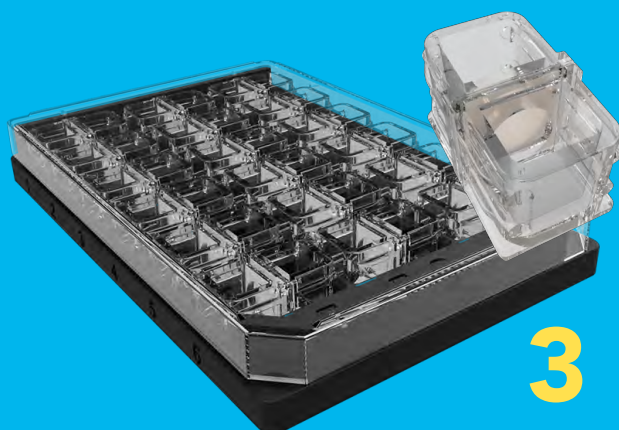
Our Research Platform



1 - Our go-anywhere microplate readers are compact and portable, allowing researchers to perform a variety of assays and measurements even in small spaces like shared modular benchtops, incubators, and anaerobic chambers.

2 - Our wireless data collection and analytics platform enables researchers to study the growth curve of microorganisms like bacteria, yeast, and fungi in real-time.

3 - Our off-the-shelf, scalable Co-Culture Duet System is designed for real-time phenotypic measurements of the microbiome enabling researchers to conduct microbial interaction studies between microorganisms with ease.



- ▶ Modular & configurable
- ▶ Semipermeable membrane divider
- ▶ Measurable in standard plate readers

Miniaturized Microplate Readers



Cerillo's compact microplate readers revolutionize microbiome research by seamlessly fitting into the most challenging environments, including anaerobic chambers, thanks to their small and durable design. Vedanta's research team is delighted with their versatility and portability.

Greg Medlock

Director of Research, Vedanta Biosciences
Cambridge, MA










cerillo

Alto

Microplate Reader



Features

-  Flexible calibration and experiment modes
-  Capable of endpoint readings or continuous real-time measurements of optical density at user determined time intervals
-  Fits 6, 12, and 96-well plates, as well as the cerillo co-culture duet plate
-  Small footprint and stackable
-  Available at 600nm, 450nm and customized wavelengths

Available Products

Alto, 600nm	ALT -1600
Alto 450nm	ALT-1450



Offers flexible measurement modes for a wide range of experiments



Ideal size for compact spaces (e.g., shared benches, incubators, chambers)



Operates in challenging environments where others can't



Streamlined standalone interface with onboard data storage



User-friendly software for quick data analysis and meaningful results

The Alto microplate reader's powerful optical system provides flexible calibration modes, accommodating a wide array of experiments including ELISA and microbial growth curves with diverse starting points.

Alto Technical Specifications

All Cerillo products are for research use only and are not intended for use in diagnostic procedures.



General

Measurement Mode	▶ Absorbance
Detection Mode	▶ Kinetic, Endpoint
Plate Types	▶ 6, 12, and 96-well plates, Cerillo Co-Culture Duet plate
Dimensions	▶ W: 15.0 cm D: 13.3 cm H: 7.2 cm
Weight	▶ 800 g
Power Input	▶ 5 V, 500 mA via USB-C receptacle

Measurement

Environmental Tolerance	▶ Temp: 0-50° C, Humidity: 0-99%, ▶ O ₂ Concentration: 0-21%, CO ₂ Concentration: 0-25%
Wavelength	▶ Single Wavelength: 600 nm, 450 nm
Light Source	▶ Monochromatic LEDs
Resolution	▶ 0.001 OD
Detection Range	▶ 0.000 - 4.000 OD
Linearity	▶ < ±1% (0.000 - 2.500 OD)
Accuracy	▶ Endpoint: < ±1% and ±0.02 OD (0.000 - 2.500 OD) ▶ Kinetic: < ±0.25% and ±0.005 OD (0.000 - 2.500 OD)
Repeatability	▶ < ±0.25% and ±0.005 OD (0.000 - 2.500 OD)
Data Storage	▶ "microSD; up to 32 GB (16 GB card provided)

Software

Operating System	▶ macOS: 11 (Big Sur), 12 (Monterey); Windows: 10, 11
Data Export Format	▶ .csv (on-board), .xlsx (some Labrador exports)









Stratus[®]

Miniaturized Plate Reader



Features

-  Functional in a broad range of environments, including anaerobic chambers, even while shaking, remote field settings, and in heated and humidified incubators
-  Continuous real-time measurements of optical density at user-determined time intervals
-  Compatible with 6, 12, and 96-well plates
-  User-friendly software that exports data to any spreadsheet software
-  Single mode (absorbance) and single wavelength only. Available in standard 600 nm or customized wavelengths
-  Small footprint and stackable

Available Products

Name	SKU
Stratus, 600nm	R2600
Stratus, Adapter	R2APT



Uniquely small footprint allows for usage and storage in confined spaces



Sturdy design allows for use in harsh and restrictive environments like incubators and anaerobic chambers



Reasonably priced with no annual subscriptions or charges for software updates*



User-friendly flexible interface allows for use with or without a computer

The Stratus is uniquely designed for microbial growth curve measurements

*A software subscription does apply when transitioning to the wireless platform

Stratus Technical Specifications

The Stratus is RoHS compliant, CE certified, made in the USA and has a two year warrantee



General

Measurement Mode	▶ Absorbance
Detection Mode	▶ Kinetic
Plate Types	▶ 6, 12, and 96-well plates, Cerillo Co-Culture Duet plate
Dimensions	▶ W: 14.4 cm D: 13.0 cm H: 6.8 cm
Weight	▶ 580 g
Power Input	▶ 5 V, 500 mA via USB-C receptacle

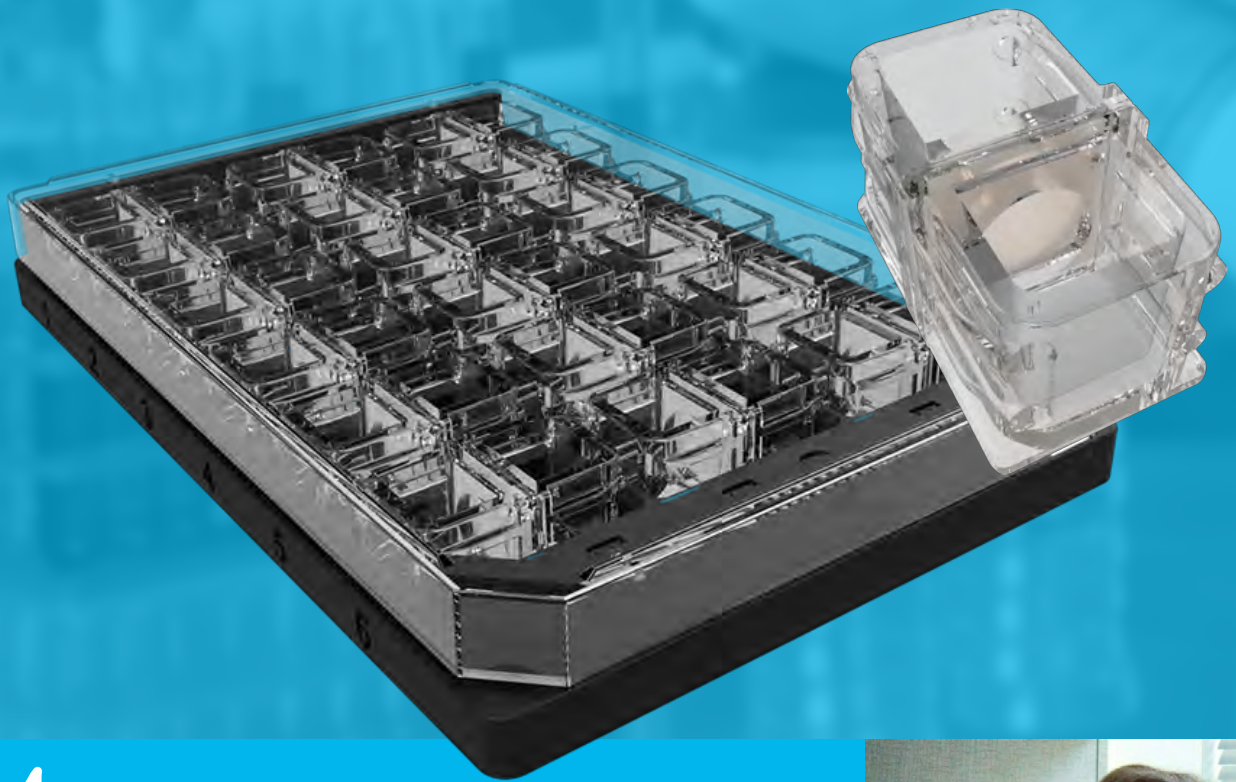
Measurement

Environmental Tolerance	▶ Temp: 0-50° C, Humidity: 0-99%
	▶ O ₂ Concentration: 0-21%, CO ₂ Concentration: 0-25%
Wavelength	▶ Single Wavelength: 600 nm, 496 nm, 465 nm, or 650 nm
	▶ Custom wavelengths available upon request.
Light Source	▶ Monochromatic LEDs
Resolution	▶ ±0.005 OD
Detection Range	▶ 0.000 - 3.000 OD
Linearity	▶ < ±1% (0.000 - 2.000 OD)
Accuracy	▶ < ±1% and ±0.015 OD (0.000 - 2.000 OD)
Repeatability	▶ < ±1% and ±0.006 OD (0.000 - 2.000 OD)
Data Storage	▶ microSD; up to 32 GB (16 GB card provided)

Software

Operating System	▶ macOS: 11 (Big Sur), 12 (Monterey); Windows: 10, 11
Data Export Format	▶ .csv (on-board), .xlsx (some Labrador exports)

Co-Culture Duet System



When I first saw the presentation of Cerillo's Co-Culture Duet System, my immediate reaction was, "Well this solves all of my problems!" The Co-Culture System dramatically reduces the time it takes to set up interaction studies and and eliminate variability. A must-have for researchers exploring the microbiome.

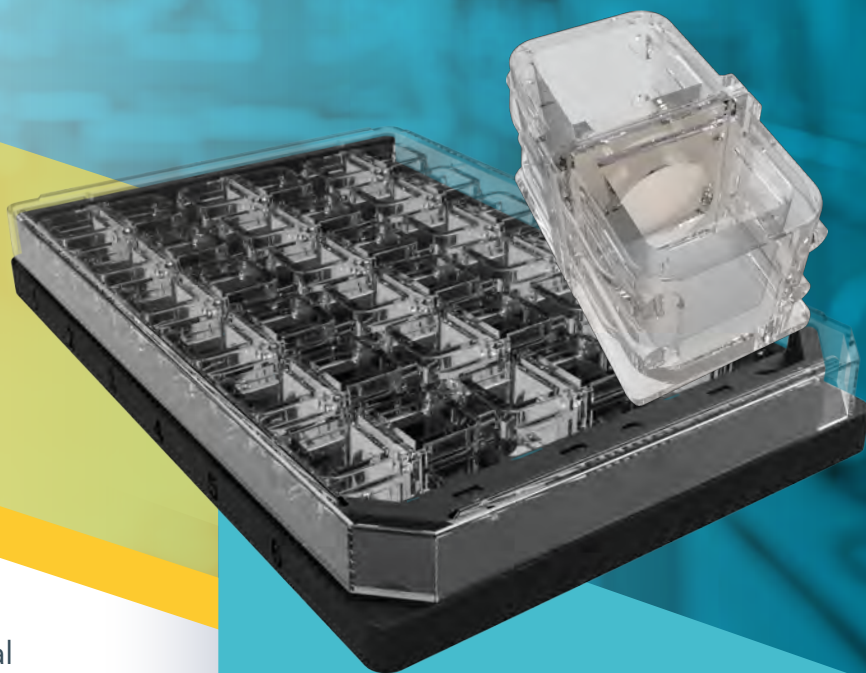
Alan J. Wolfe, PhD

Professor, Microbiologist
Loyola University Chicago











Co-Culture Duet System



Features

-  Observe and study individual microbial populations in real-time
-  Measure the growth of one microbial population alongside other populations
-  Porous barrier physically isolates populations while maintaining fluidic contact
-  Multiplexed plate accommodates 18 duets
-  Physically accessible wells enable population sampling during and after experiment
-  Compatible with other automation systems giving you the freedom and flexibility to run additional assays on different platforms



Easily run comprehensive microbial interaction studies



Save valuable time and resources with this ready-to-use, off-the-shelf solution



Compare experiments and facilitate collaborations with standardized system



Improved collaboration through standardized co-culture set-up and analysis platform

Available Products

Co-Culture Duet System	CCU-1000
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With the Co-Culture Duet System, you can expand your lab capabilities while improving accessibility, standardization and scalability in your microbial interaction studies

All cerillo products are for research use only and are not intended for use in diagnostic procedures.

To learn more about cerillo and our products, visit us at www.cerillo.bio or by email at info@cerillo.bio



cerillo

Research Platform



Benefits

- ▶ Livestream your experiments with real-time data visualization.
- ▶ Increase flexibility and reduce hands-on time with wireless controls.
- ▶ Scale your experiments (connect up to 5 microplate readers!).
- ▶ Analyze, collaborate and share your findings with premium labrador software.

Cerillo's Co-culture System provides researchers with unprecedented access to:

- ▶ Co-culture capabilities without having to design and validate a complicated be-spoke system.
- ▶ Individual microbial populations within a consortia, enabling researchers to measure them directly and separately.
- ▶ Directly sample individual cultures during and after the experiment, without the need for complex and expensive equipment or procedures.



Co-Culture Duet fits inside stratus microplate reader which is compact, portable, and versatile, allowing researchers to perform a wide range of experiments and measurements even in small spaces like shared modular benchtops, incubators, and anaerobic chambers.



Canopy, our premium wireless device, facilitates the seamless transmission of results from your co-culture system to your monitor, enabling you to visualize growth data in real-time and adjust your experiments remotely.



Our Labrador companion software synchronizes and analyzes your microbiome data, providing you with in-depth insights.



Co-Culture Duet System

Technical Specifications

Cerillo's Co-Culture Duet System enables researchers to observe and study individual microbial populations and measure the growth of one microbial population alongside other populations.

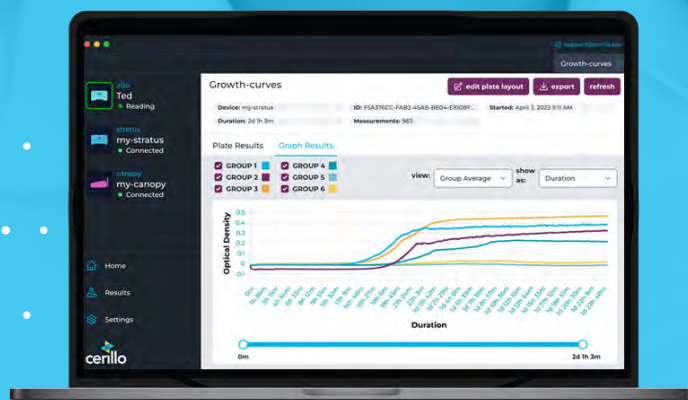
General

Compatible Products	▶ Stratus, Alto and other standard plate readers that can accept a 1.52 cm tall microplate (~1.75 cm with a lid)
Capacity	▶ Up to 18 duets
Duet	▶ 2 reservoirs, 1 membrane
Dimensions	▶ Frame (with duets): 12.78 x 8.54 x 1.52 cm (LWH) ▶ Reservoir internal: 0.8 x 0.9 x 1.2 cm (LWH) ▶ Duet: 2.4 x 1.5 x 1.4 cm (LWH)
Weight	▶ Frame: 89 g
Duets	▶ 3 g each
Reservoir volume	▶ 800-1000 μ L

Membrane

Material	▶ Polycarbonate
Treatment	▶ PVP (hydrophilic)
Pore Size	▶ 0.2 μ m
Surface Area	▶ 0.503 cm ²
Diameter	▶ 0.8 cm
Membrane Thickness	▶ 25 μ m

Wireless & Remote Monitoring



I'm a devoted user of Cerillo's products, finding great value in the user-friendly microplate readers, co-culture system and Labrador software. The ability to use the microplate readers and co-culture system in our anaerobic cabinets has completely transformed the way in which we design our experiments and their compact size enables us to perform multiple high-throughput screening assays at once. The software is also very intuitive, making it easy to analyze and share my results.

Emily Rutten

Junior Research Assistant,
Hudson Institute of Medical Research – Australia





Canopy with Cerillo® Labrador Premium

Wireless Accessory Package



Features

- Wireless data transmission and control of Cerillo's microplate reader
- Real-time monitoring of readings within 15 meters of cerillo devices
- Modern, responsive user interface
- Small and portable
- Wirelessly connect up to five Cerillo devices to one computer
- Access for up to five unique users of the Cerillo Labrador Premium Software

Wireless Accessory Package Includes

Canopy	CAN-1000
Cerillo Labrador Premium Software Subscription	one-year license



Complete your experiments effortlessly with new wireless capabilities



Optimize the productivity and efficiency of your lab work



Access unique capabilities in a range of life science disciplines

This wireless accessory package perfectly complements Cerillo devices, expanding capabilities to further optimize research activities

All cerillo products are for research use only and are not intended for use in diagnostics procedures.

To learn more about cerillo and our products, visit us at www.cerillo.bio or email us at info@cerillo.bio

Canopy Technical Specifications

The canopy is RoHS, REACH and FCC compliant, CE certified, made in the USA, and has a two-year warranty.



General

Compatible Products	▶ Stratus and Alto Microplate Readers
Dimensions	▶ 11.32 X 6.61 X 4.78 cm (LWH)
Weight	▶ 170 g
Power Input	▶ 5.1 V, 1 A via USB-C receptacle

Communication

Wireless Protocol	▶ IEEE 802.15.4
Wireless Range	▶ 15 m

Cerillo Labrador Premium Software

Operating System	▶ macOS: 11 (Big Sur), 12 (Monterey); Windows: 10, 11
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Meet our Co-Culture Champions



Meet our Co-Culture Champions



Unveiling Struvite Stones: A New Enzyme's Role

Cerillo's co-culture plate allows me to grow live bacteria in 1 well, with sterile urine in another well, allowing only proteins (such as arginine deiminase) but not bacteria to cross between wells, thereby allowing quantification by growth curves. Without a co-culture plate, I cannot add live bacteria to urine to quantify crystallization, because bacterial growth will interfere with crystal growth readings."

David Liu

Student Researcher – Western University, Ontario, Canada



Defying Arsenic: Insights into Gut Microbiome Resilience



We know that our experiments will benefit from Cerillo's new Co-Culture system as it will allow us to set up many simultaneous coculture experiments in a small footprint area inside an anaerobic chamber thus allowing collection of phenotypic co-culture data in a high-throughput manner. And the unique design of the co-culture duet system affords us with the ability to sample growth media directly for metabolite identification and to also harvest cells in real time for time-series gene expression profiling of microbes growing together in different co-culture combinations, versus those growing alone."

Oona Snoeyenbos-West, Ph.D.

Research Scientist, University of Arizona (Carini Lab)



Bacterial Interactions: Understanding Rupture and Consumption

"Being able to have pure culture of interacting species greatly enhances our ability to track specific species and the metabolic and genetic activities of specific (select) species. The Cerillo platform facilitates our current quantification of interactions between select species and strains, but equally exciting the platform allows us to inoculate one chamber with complex samples (fecal, water, soil) separated from a toxin-producer (or metabolite of interest) and identify which species are selected from the natural sample."

Andrew Cameron, Ph.D.,

Associate Professor, University of Regina, SK Canada



Meet our Co-Culture Champions



Defending Amphibians: Revolutionizing Chytrid Fungi Therapies

Cerillo's co-culture system will allow us to better understand the influence of chytrid secondary metabolites on the growth rates of bacteria. The ease of access to each well with Cerillo's co-culture plates facilitates the periodic removal of small volumes of culture for metabolomic and transcriptomic profiling, greatly increasing our knowledge of microbiome-pathogen interactions. The ability to co-culture live probiotics and chytrid zoospores will more closely simulate conditions found on amphibian skin in nature."

Ross Whetstone, – Ph.D. Student
University of Massachusetts, Boston



Unraveling Gut Secrets: The Role of Bacterial Viruses (Phages)

Because of the physical separation between wells, the Co-Culture system allows for nutrients to be shared but bacteria to be separated. Bacterial separation simplifies how we would quantify the individual species of interests, making it possible to rapidly quantify bacterial cell numbers by OD and not having to wait for 16S amplicon sequencing, which may not be able to distinguish between taxonomically similar species that may have very different functions.

Bryan Hsu, Ph.D.
Assistant Professor of Biological Sciences
Virginia Tech



Elevating Women's Health: Tackling the Prevailing Challenge of Bacterial Vaginosis in Africa

In our quest to identify regionally-relevant, affordable probiotic candidates we have identified women in African populations with longitudinally stable, optimal vaginal microbiotas. We have isolated potential probiotic candidates from these women and are trying to understand their interactions with BV-associated bacteria from women in the same populations. Co-culture experiments are a crucial aspect of this and the Cerillo Co-culture system would allow us to build upon the basic proof of concept experiments we have done thus far.

Jo-Ann Passmore PhD & Brian Kullin PhD

The Mucosal Immunology Group (MIG), University of Cape Town, South Africa



Meet our Co-Culture Champions



Preterm Babies' Microbiomes: Unlocking Health Insights

We are presently assessing the growth of bifidobacteria species in co-culture through the utilization of species-specific qPCR. With the co-culture plates we will monitor the growth of our bacteria in for the whole culture time which is usually between 24 and 48h. Being able to sample the co-culture through the experiment would also allow us to monitor the HMO usage through time and evaluate the metabolites produced such as SCFAs. We would hope to gain information on how the bacteria studied interact to better understand how the preterm microbiome establishes."

Andrea Chiara Masi

Ph.D., Post Doc Fellow, Newcastle University, UK



Gut Microbiome Interactions: Insights for Optimal Probiotic Use

Utilizing co-culturing techniques, we can help to determine why our gastrointestinal communities are shaped like they are through strain-strain and host-strain interactions. Cerillo's co-culture system would address the massive problem of adversity towards doing co-culture experiments. Often individuals shy away from looking at these interactions due to the inaccessibility of large scale culture projects (many tubes, medias, strains, etc.). Additionally, I believe the system can help determine the unseen interactions present when we introduce new "probiotic" or pathogenic organisms into a host system.

Evan Chrisler, BS,

Graduate Research Assistant, University of Wisconsin, Madison



Exploring Lung Health: Unraveling NTHi vs. Corynebacterium spp in the Respiratory Microbiome

Using the Duet system I'm aiming to evaluate the impact of Corynebacterium spp on NTHi planktonic growth rate over 24 hours (OD600 readings), metabolic activity (sampling of media from the duet wells at 24 hours for NMR analysis), and biofilm formation (crystal violet staining of biofilm formed on the surface of the duet wells). These assays will complement other conventional competition assays to establish full metabolic reference spectra for NTHi and Corynebacterium spp during co-culture.

Jasira Patel

Ph.D. Student, De Montfort University, UK

